

REMARKS

This amendment further cancels claims 29, 82, 83, 84, 86, 87, 89, 92-94, 96, 97, 99, and 102. With these cancelations, claims 6-17, 31, 35, 36, 40, 46, 48-55, 78, and 81 are now pending in this application.

The claims are amended such that all the claims now depend, directly or indirectly, from claim 6. As now amended, claim 6 is redirected to an organic light emitting device that comprises an electron transporting layer. Support for the amendment to claim 6 can be found at least in ¶ [0073] at page 24 of the specification. Previously independent claims 31, 36, 46, and 78 are also redirected to an organic light emitting device and are made to depend from claim 6.

REJECTIONS UNDER § 112

The Office Action rejects claims 78, 81, 92, and 102 for being non-compliant with the written description requirement of § 112, first paragraph. The Office Action also rejects claims 78, 81, 82, 92, and 102 for being non-compliant with the enablement requirement of § 112, first paragraph. The Office Action also rejects claims 83 and 93 for depending from a claim that has been canceled. Applicant requests reconsideration of these rejections.

Without conceding to the propriety of this rejection and in order to expedite prosecution, rejected claims 82, 83, 92, 93, and 102 are canceled by this amendment and claim 78 is amended to specify that the metal is Ir, Re, Os, Pt, or Au. Accordingly, withdrawal of the rejections is respectfully requested.

REJECTIONS UNDER § 102

Lim

The Office Action rejects various of the claims under § 102(b) as being anticipated by Lim (US 4,066,569). Applicant requests reconsideration of this rejection.

Claim 6 recites an organic light emitting device having an electron transporting layer. As is well-known in the art, an electron transporting layer is located between the cathode and the emissive layer of an organic light emitting device. In the device of claim 6, the electron transporting layer comprises an electron transporting material, which comprises an organic matrix and an organometallic compound as an electron-donating dopant.

Lim describes metallocenes that are mixed with conjugated cyano-organic compounds for use in liquid crystals. (See, e.g., Abstract). Unlike claim 6, however, Lim does not disclose an organic light emitting device having an electron transporting layer, wherein the electron transporting layer comprises an organic matrix and an organometallic compound as an electron-donating dopant.

For at least these reasons, Applicant respectfully submits that claim 6, and the claims that depend therefrom, are novel over Lim. Accordingly, withdrawal of the rejection is respectfully requested.

Hsieh

The Office Action rejects various of the claims under § 102(b) as being anticipated by Hsieh (US 5,853,906). Applicant requests reconsideration of this rejection.

Hsieh describes a conductive coating comprising an oxidized oligomer salt and a charge transport component. (See, e.g., Abstract). The oxidized oligomer salt may be an oxidized oligo-metallocene salt. (Hsieh, at col. 4, ln. 36). The coating composition can be used in electroluminescent devices. (Hsieh, at col. 2, ln. 54). Unlike claim 6, however, Hsieh does not disclose an organic light emitting device having an electron transporting layer, wherein the electron transporting layer comprises an organic matrix and an organometallic compound as an electron-donating dopant. In particular, Hsieh does not specifically disclose that the conductive coating is used in the electron transporting layer of an organic light emitting device.

For at least these reasons, Applicant respectfully submits that claim 6, and the claims that depend therefrom, are novel over Hsieh. Accordingly, withdrawal of the rejection is respectfully requested.

REJECTIONS UNDER § 103

Hsieh

The Office Action rejects various of the claims under § 103(a) as being obvious over Hsieh. Applicant requests reconsideration of this rejection.

Claim 6 recites an organic light emitting device comprising an electron transporting layer. The electron transporting layer comprises an electron transporting material, which

comprises an organic matrix and a dopant. The dopant is an organometallic compound capable of transferring electrons to the organic matrix.

As explained in ¶ [0025] on page 7 of the specification, dopants in a charge transporting organic matrix function analogously to n-type and p-type dopants for inorganic semiconductors. In a charge conducting organic matrix, an n-type dopant acts as an electron donor and will transfer electrons to the organic matrix. In the process, the dopant becomes oxidized and the organic matrix becomes reduced. Conversely, a p-type dopant acts as an electron acceptor and will accept electrons from the organic matrix. In this case, the dopant becomes reduced and the organic matrix becomes oxidized.

In the device of claim 6, the organometallic dopant is used in an electron transporting layer and the dopant transfers electrons to the organic matrix (i.e., the dopant is an electron donor). In doing so, the dopant converts from a *reduced form to an oxidized form*. Dependent claim 9 further specifies that the dopant is stable in the oxidized form (i.e., after donating its electron(s) to the organic matrix). Dependent claim 10 further specifies that the dopant decomposes to redox inactive materials upon oxidation (i.e., after donating its electron(s) to the organic matrix).

In contrast to claim 6, the metallocenes used in Hsieh are in an *already oxidized form*. For example, Hsieh at column 4, line 36 discloses “oxidized oligo-metallocene salts” and column 25, line 23 discloses “oxidized oligo-metallocene salts of the formula . . .” Thus, in the process of charge transport, the oxidized metallocenes of Hsieh will become reduced and the charge transport component will become oxidized (i.e., the oxidized metallocenes serve as p-type dopants). In other words, the oxidized metallocenes will receive an electron (thereby converting to reduced form) while the charge transport component will donate an electron (thereby converting to oxidized form). This is the reverse of the process that occurs in the claimed invention, as explained above.

Because the oxidized metallocenes in Hsieh have the opposite function to what is required for a dopant in an electron transporting layer, there is no motivation to use these oxidized metallocenes of Hsieh as dopants in an electron transporting layer. Thus, Hsieh provides no motivation for using its metallocenes in an electron transporting layer. Doing so would render the electron transporting layer inoperative for its intended purpose (i.e.,

transporting electrons). *See* MPEP 2143.01(V) (“The proposed modification cannot render the prior art unsatisfactory for its intended purpose.”).

For at least these reasons, Applicant respectfully submits that claim 6, and the claims that depend therefrom, are non-obvious over Hsieh. Accordingly, withdrawal of the rejection is respectfully requested.

Swager

The Office Action rejects various of the claims under § 103(a) as being obvious over Swager (US 7,186,355). Applicant requests reconsideration of this rejection.

Swager describes a charge conducting composition which provides an insulated nanoscopic pathway. (See, e.g., Abstract). Swager does not disclose that the charge conducting composition could be used in the electron transporting layer of an organic light emitting device. In fact, Swager does not disclose an organic light emitting device at all. Rather, the charge conducting composition is intended to be used in sensors for detecting analytes. (See, e.g., Abstract). There is nothing in Swager suggesting that the charge conducting composition could be used in the electron transporting layer of an organic light emitting device.

For at least these reasons, Applicant respectfully submits that claim 6, and the claims that depend therefrom, are non-obvious over Swager. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

Applicant respectfully submits that the present application is in condition for allowance. The Examiner is invited to contact Applicant's representative to discuss any issue that would expedite allowance of this application.

The Commissioner is authorized to charge all required fees, fees under § 1.17, or all required extension of time fees, or to credit any overpayment to Deposit Account No. 11-0600 (Kenyon & Kenyon LLP).

Respectfully submitted,

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